

Claims:

1. A polishing pad for a chemical mechanical
2. polishing apparatus, comprising:
3. a polishing surface;
4. an aperture formed in the polishing surface, the
5. aperture including a first section with a first dimension
6. and a second section with a second, different dimension;
7. a substantially transparent plug having a first
8. portion positioned in the first section of the aperture and
9. a second portion positioned in the second section of the
10. aperture; and
11. means for securing the plug in the aperture.
1. 2. The polishing pad of claim 1 wherein the plug
2. is made of a polyurethane material.
1. 3. The polishing pad of claim 1 wherein the fixing
2. means includes an adhesive material.
1. 4. The polishing pad of claim 3 wherein the
2. adhesive material is made of an elastomeric polyurethane
3. material.
1. 5. The polishing pad of claim 1 wherein the first
2. portion of the plug has substantially the same dimension as
3. the first section of the aperture and the second portion of
4. the plug has substantially the same dimension as the second
5. section of the aperture.
1. 6. The polishing pad of claim 5 wherein the first
2. portion of the plug includes a top surface which is coplanar
3. with the polishing surface.

1 7. The polishing pad of claim 6 wherein the
2 thickness of the second portion of the plug is less than the
3 depth of the second section of the aperture.

1 8. The polishing pad of claim 6 wherein the first
2 dimension is larger than the second dimension.

3 9. The polishing pad of claim 1 wherein the plug
4 includes a rim.

1 10. The polishing pad of claim 1 wherein the fixing
2 means includes an adhesive material located on the rim.

3 11. A polishing pad for a chemical mechanical
4 polishing apparatus, comprising:
5 a first layer having a polishing surface;
6 a second layer adjacent to the first layer;
7 an aperture through the first and second layers, the
8 aperture including a first opening in the first layer with a
9 first cross-sectional area and a second opening in the
10 second layer with a second, smaller cross-sectional area;
11 a substantially transparent plug positioned in the
12 aperture, the plug having a first portion positioned in the
13 first section of the aperture and a second portion
14 positioned in the second section of the aperture; and
15 an adhesive material fixing the plug in the
16 aperture.

1 12. The polishing pad of claim 11 wherein the first
2 layer has a first durometer measurement and the second layer
3 has a second, smaller durometer measurement.

1 13. A method of forming a polishing pad, comprising
2 the steps of:

3 forming an aperture in a polishing pad such that the
4 aperture includes a first section with a first dimension and
5 a second section with a second, different dimension;

6 placing a substantially transparent plug in the
7 aperture, with the plug having a first portion positioned in
8 the first section of the aperture and a second section
9 positioned in the second section of the aperture; and

10 securing the plug in the aperture.

1 14. The method of claim 13 wherein the securing
2 step includes fixing the plug in the aperture with an
3 adhesive.

1 15. The method of claim 13 wherein the step of
2 forming the aperture includes removing material from the
3 polishing pad.

1 16. The method of claim 15 wherein the removing
2 step includes removing the first section from a first layer
3 of the polishing pad and removing the second section from a
4 second layer of the polishing pad.

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